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AMENDMENT filed under PCT Article 34

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## AMENDMENT

To: Commissioner of the Patent Office  
(To: Examiner of the Patent Office)

### 1 Identification of the International Application

PCT/JP2005/003680

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### 4 Item to be Amended

Description and Claims

**5. Contents of amendment**

- (1) On line 23 on page 2 of the description, the passage “Specifically, the present invention..., which contains 1 or more types of amino acids or salts thereof instead of a protein raw material.” is amended to “Specifically, the present invention..., which contains no protein raw materials but contains 1 or more types of amino acids or salts thereof.”
- (2) On line 1 on page 3 of the description, the passage “...1, 2, or more types of raw materials selected from..., and baker’s yeast, and 1 or more types of amino acids or salts thereof instead of a protein raw material.” is amended to “...1, 2, or more types of raw materials selected from..., and baker’s yeast, and 1 or more types of amino acids or salts thereof.”
- (3) On line 20 on page 5 of the description, the passage “...a pet food that contains no amino-acid-containing raw materials,” is amended to “...a pet food that contains no protein-containing raw materials,”
- (4) In claim 1, the passage “which contains 1 or more types of amino acids or salts thereof instead of a protein raw material.” is amended to “which contains no protein raw materials but contains 1 or more types of amino acids or salts thereof.”
- (5) In claim 5, the passage “...which contains 1, 2, or more types of ... amino acids or salts thereof, instead of a protein raw material.” is amended to “...which contains 1, 2, or more types of ..., and 1 or more types of amino acids or salts thereof.”
- (6) Claim 6 is added.
- (7) Claim 7 is added.

**6. List of attached documents**

- (1) Pages 2, 3, and 5 of the description
- (2) Claims, Page 13

In such a case, an allergic reaction can occur. Moreover, antigen-presenting cells recognize a peptide having a lower molecular weight as a result of hydrolysis, so as to transmit the relevant T-cell antigenic determinant to T lymphocytes. As a result, allergic reactions can occur or pets can show a tendency to experience diarrhea or soft feces. Hence, the use of such low molecular weight peptides is unsatisfactory. Some attempts have been made whereby homemade pet foods are prepared so as not to provide proteins that could be allergens. Such attempts are problematic in that such homemade pet food cannot be immediately provided when needed because preparation thereof takes much time and such pet food cannot be stored. It is also difficult to provide all the essential nutrients to a pet in just proportion, so that body weight loss can be caused due to malnutrition, and such homemade pet food has low palatability. As described above, development of a pet food that can reduce the risk of the occurrence of a food allergy reaction and that can be conveniently used for feeding pets has been desired.

All publications, patents, and patent applications cited herein are incorporated herein by reference in their entirety.

#### DISCLOSURE OF THE INVENTION

An object of the present invention is to provide a pet food that enables the reduction of the occurrence of food allergy reactions and can be conveniently used for feeding a pet.

According to the present invention, an amino acid or a salt thereof that is a minimum constitutional unit of a protein is provided as a substitute for a protein source in a pet food. Alternatively, according to the present invention, an amino acid or a salt thereof and a protein with low allergenicity are used as raw materials. These raw materials are heat-extruded and molded using an extruder, swelled, and then foamed, for example. The thus produced pet foods can be conveniently used by users for feeding their pets, can be easily stored, have good palatability, and satisfy requirements for essential nutrients for pets. Such pet foods enable reductions in the occurrence of food allergy reactions and can contribute to pet health.

Specifically, the present invention relates to a pet food for reducing food allergy reactions, which contains no protein raw materials, but contains 1 or more types of amino acids or salts thereof.

Furthermore, the present invention relates to a pet food for reducing food allergy reactions, which contains a plant protein raw material with low allergenicity and 1 or more types of amino acids or salts thereof.

Furthermore, the present invention relates to a pet food for reducing food allergy reactions, which contains 1, 2, or more types of raw materials selected from potato, sweet potato, rice, foxtail millet, barnyard millet, kaoliang, corn, pea, brewer's yeast, and baker's yeast, and 1 or more types of amino acids or salts thereof.

Examples of the above amino acids include alanine, arginine, asparagine, aspartic acid, methionine, cystine, cysteine, glutamic acid, glutamine, glycine, threonine, histidine, valine, leucine, isoleucine, lysine, tryptophan, phenylalanine, tyrosine, proline, serine, and taurine. 1, 2, or more types of such amino acids are used. Examples of plant protein raw materials with low allergenicity include potato, sweet potato, rice, foxtail millet, barnyard millet, kaoliang, corn, and pea. Examples of protein raw materials other than such plant protein raw materials with low allergenicity include brewer's yeast and baker's yeast. 1, 2, or more types of such protein raw materials are used.

#### BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 shows the reaction of serum IgE of dogs subject to food allergies with a dog food extract. In the Western blot figure, 1 indicates the dog food and 2 indicates a beef extract (positive control). In addition, no ingredients reacting with the serum IgE of the dogs subject to food allergies were detected.

Fig. 2 shows the reactivity (case 1 and case 2) of lymphocytes against the dog food extract in dogs subject to food allergies.

Fig. 3 shows the proportions of food intake (the amount of food provided was determined to be 100).

Fig. 4 shows body weight changes.

Fig. 5 shows hematocrit changes.

Fig. 6 shows hemoglobin changes.

Fig. 7 shows blood total protein changes.

Fig. 8 shows blood albumin changes.

Fig. 9 shows the properties of feces. In Fig. 9, the conditions of feces were evaluated on 9 levels (on scores between 1 and 5). Scores between 1.5 and 2.5 indicate the normal conditions of feces.

Fig. 10 shows itching scores of dogs fed with the dog food.

Specific examples of such amino acids include alanine, arginine, asparagine, aspartic acid, methionine, cystine, cysteine, glutamic acid, glutamine, glycine, threonine, histidine, valine, leucine, isoleucine, lysine, tryptophan, phenylalanine, tyrosine, proline, serine, and taurine. Examples of such salts of these amino acids include potassium and sodium. Furthermore, the amounts of these amino acids or salts thereof to be used herein are not particularly limited.

Examples of protein raw materials with low allergenicity that are used in the present invention are plant protein raw materials. Moreover, specific examples of such protein raw materials with low allergenicity include potato, sweet potato, rice, foxtail millet, barnyard millet, kaoliang, corn, pea, brewer's yeast, and baker's yeast. Furthermore, the amounts of these protein raw materials to be used herein can be appropriately determined and are not particularly limited.

Furthermore, when 2 or more types of raw materials containing proteins with low allergenicity are used, an effect of preventing the occurrence of a food allergy can be exerted at a level that is far superior to that in the cases of conventional pet foods, whereas the degree of reducing the risk of the occurrence of a food allergy is somewhat lowered compared with the use of 1 type of raw materials containing proteins with low allergenicity.

The above pet food can be processed into a dry pet food through heat-extrusion and molding using an extruder followed by swelling and foaming. In this way, a pet food that users can feed their pets at any necessary times and that can be easily stored can be obtained. It becomes possible to raise a pet with only the pet food of the present invention and water, while keeping the pet health.

The present inventors have discovered that the risk of the occurrence of a food allergy reaction can be reduced and that users can conveniently feed their pets while maintaining pet health through feeding a pet subject to a food allergy with a pet food that contains no protein-containing raw materials, but contains 1 or more types of amino acids, or with a pet food that is composed of 1, 2, or more types of protein-containing raw materials selected from potato, sweet potato, rice, foxtail millet, barnyard millet, kaoliang, corn, pea, brewer's yeast, and baker's yeast, in addition to 1 or more types of amino acids. An object of the present invention is to provide a pet food that can be conveniently used and that can reduce the risk of the occurrence of a food allergy reaction in pets subject to food allergies or pets suspected to be subject to food allergies through the combined use of amino acid(s) instead of protein(s) or the use of amino acid(s) and protein(s) with low allergenicity in a pet food.

## CLAIMS

1. (amended) A pet food for reducing food allergy reactions, which contains no protein raw materials but contains 1 or more types of amino acids or salts thereof.
2. The pet food for reducing food allergy reactions according to claim 1, wherein the amino acid is 1 or more types of alanine, arginine, asparagine, aspartic acid, methionine, cystine, cysteine, glutamic acid, glutamine, glycine, threonine, histidine, valine, leucine, isoleucine, lysine, tryptophan, phenylalanine, tyrosine, proline, serine, and taurine.
3. A pet food for reducing food allergy reactions, which contains a plant protein raw material with low allergenicity and 1 or more types of amino acids or salts thereof.
4. The pet food for reducing food allergy reactions according to claim 3, wherein the plant protein raw material with low allergenicity is potato, sweet potato, rice, foxtail millet, barnyard millet, kaoliang, corn, or pea.
5. (amended) A pet food for reducing food allergy reactions, which contains 1, 2, or more types of raw materials selected from potato, sweet potato, rice, foxtail millet, barnyard millet, kaoliang, corn, pea, brewer's yeast, and baker's yeast, and 1 or more types of amino acids or salts thereof.
6. (added) The pet food for reducing food allergy reactions according to claim 3, wherein the amino acid is 1 or more types of alanine, arginine, asparagine, aspartic acid, methionine, cystine, cysteine, glutamic acid, glutamine, glycine, threonine, histidine, valine, leucine, isoleucine, lysine, tryptophan, phenylalanine, tyrosine, proline, serine, and taurine.
7. (added) The pet food for reducing food allergy reactions according to claim 5, wherein the amino acid is 1 or more types of alanine, arginine, asparagine, aspartic acid, methionine, cystine, cysteine, glutamic acid, glutamine, glycine, threonine, histidine, valine, leucine, isoleucine, lysine, tryptophan, phenylalanine, tyrosine, proline, serine, and taurine.